



How Technology Can Augment Clinical Documentation



EZDI

an **agshealth** company

The role of clinical documentation in medical practice can be traced all the way back to the papyrus records of ancient Egypt, nearly 4000 years ago. This form of clinical documentation, however, was purely for didactic purposes. In fact, the present-day notion of using clinical documentation to directly improve patient care was not developed until the 20th century.

While clinical documentation continues to be an integral part of healthcare, the practice of manual record keeping has almost gone extinct. The advent of electronic health records (EHRs) has allowed physicians and healthcare providers to leverage a wide range of platforms, like smartphones and tablets, to access a unified source of complete patient information and case histories.

But the past decade has, without doubt, been the most transformative period for clinical documentation. In 2012, the Centers for Medicare and Medicaid Services (CMS) in the US created a watershed moment in healthcare history by sanctioning the 'pay-for-performance' initiative. This paved the way for the shift from a volume-based model to a value-based care model for the industry.

The change, however, has not been easy for healthcare institutions. It has resulted in value-based reimbursement issues like hospital-acquired complications (HACs) and audit issues that stemmed from inaccurate documentation.



The Transition to a Strong CDI Program

As these concerns continue to manifest, it has become increasingly clear that for the value-based care model to work, hospitals need to focus on accurate clinical documentation. This is where a robust CDI program comes in. By boosting the accuracy of coding and improving the communication between siloed departments, a strong clinical documentation improvement (CDI) program can facilitate an enhanced quality of patient care.

But legacy CDI programs often suffer from unstructured information and data duplication that get in the way of their core objective of accurate documentation. Moreover, as CDI leadership is constantly under pressure to monitor and show the ROI of their systems to hospital management, these legacy systems often don't deliver the kind of benefits that justify their cost.

The need to transform becomes clearer when you consider the survey result of industry-leading rating firms such as Leapfrog and US News & World Report. The annual Leapfrog Hospital Survey indicates, in no uncertain terms, that the healthcare industry must lean into the shift from legacy methods of documentation to more modern, technologically advanced ones.

Such surveys profile hospitals based on how they leverage CDI to elevate patient safety and quality of care. The survey parameters include clinical processes and indicators which are, again, affected by documentation. A positive performance in these rankings actively determine a hospital's clinical expertise and financial standing. Keeping this mind, a strong CDI program can boost a hospital's reputation and heighten its popularity and credibility.



¹ 2019 Leapfrog Hospital Survey: <http://www.leapfroggroup.org/survey-materials/survey-login-and-materials>

Why Your Organization Needs a Strong CDI

But what exactly constitutes a strong CDI program? A strong CDI program is one that generates accurate, complete, and compliant documentation. When the documentation is flawless, it can be relied on to yield tangible results like process optimization measures that capture maximum revenue. It can also subsequently be leveraged to objectively measure outcomes. This results in authentic hospital profiling and public reporting, which increases visibility of the hospitals' capabilities.

Accurate documentation of HACs, patient safety indicators (PSIs), and risk-of-mortality (ROM) affects quality measures that impact a hospital's bottom line. Both Medicare and the CMS take these measures as a standard to define reimbursements.

With insurance firms increasingly moving towards a payment model that uses Medicare Severity Diagnosis Related Groups (MS-DRGs), accurate documentation has become a necessity. Failure to meet these requirements will negatively affect reimbursements. Effective CDI, through initiatives such as the Recovery Audit Contractor (RAC) program by the CMS, has helped hospitals recover millions in improper payments in insurance schemes.

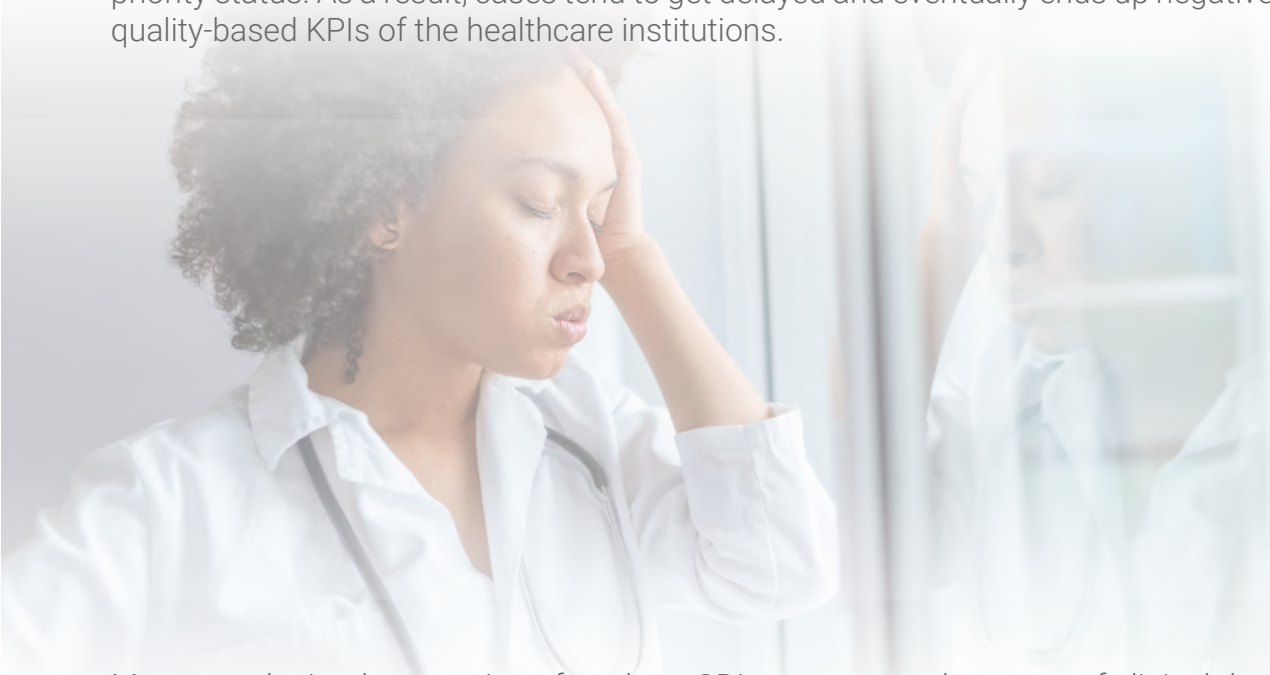


Challenges within CDI

Clearly the benefits of a robust CDI program are manifold and indisputable. But despite this, hospitals and healthcare institutions face multiple challenges when it comes to implementing technologically augmented CDI practices. One of these impediments is the initial investment required. As discussed, hospital leadership need to be firmly persuaded of the benefits and ROI of any new program before they sign up. Furthermore, helping physicians engage in the CDI program is crucial to successful implementation.

The complication with such an approach is that the ROI only becomes evident in the advance stages of the value chain, since the benefits of CDI are related to performance-based outcomes. This makes it difficult for CDI leadership to show or track the immediate results of transforming their existing CDI program.

When it comes to response, physicians often relegate queries from coders and CDI staff to a low priority status. As a result, cases tend to get delayed and eventually ends up negatively affecting the quality-based KPIs of the healthcare institutions.



Moreover, the implementation of a robust CDI program needs a team of clinical documentation specialists (CDSs) within the care facility. Since CDI is not a part of organized learning in medical school and has only come to the forefront relatively recently, there is a dearth of skilled personnel. Hospitals, therefore, need to conduct extensive training programs that further increases the cost burden of implementation. In a highly competitive environment, this can seem like an obstacle for growth.

Another challenge is the expansion of CDI to cover other service lines such as the outpatient and emergency departments. According to a survey by Association of Clinical Documentation Improvement Specialist (ACDIS), only 10% of hospitals currently have an outpatient CDI program in place.² Expanding CDI to these services can prove to be time and money consuming which may become a difficulty for hospitals with limited resources. The barriers to Implementing Outpatient CDI include:

² Outpatient Clinical Documentation Improvement (CDI): An Introduction: <https://acdis.org/system/files/resources/outpatient-cdi-intro.pdf>

**Staffing:**

Quicker patient care and reduced number of notes means separate identification of productivity standards for outpatient CDI staff and creating a CDI team trained specifically to meet these standards

**Timing:**

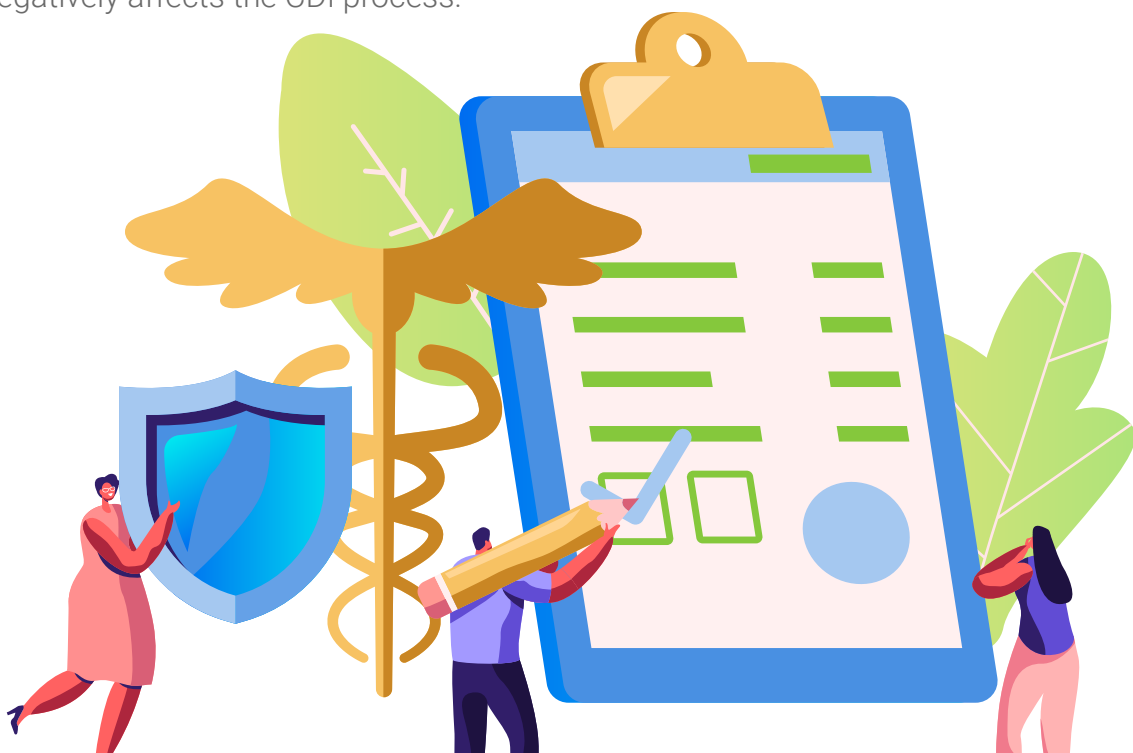
Larger volumes and a higher rate of patient processing means that outpatient CDI programs need adequate documentation process that can handle the volumes to perform reviews before billing is completed

**Buy-in:**

The large number of patients and the subsequent workload of the outpatient and emergency departments, ensuring physician engagement can be a barrier in implementing an outpatient CDI program

Hospitals relying on legacy documentation processes often find it difficult to overcome difficulties stemming from the siloed nature of departments like Health Information Management (HIM), Quality Management, and Case Management. The digitization of records has helped ease this issue to some extent, but obstacles persist. For instance, with access to EHRs, healthcare professionals have the option of working remotely with CDI, making work schedules more feasible. However, remote CDI impedes the process of building cooperation between these siloed departments. Working remotely makes it difficult for HIMs and CDSs to build relationships with physicians, further obstructing collaborative efforts.

And while EHRs have undoubtedly helped simplify patient record processing, where manual processes still exist, they lead to redundant information, low quality records, and a gamut of errors which negatively affects the CDI process.



The Next-Gen Leap with AI and NLP

So where exactly are we in the journey to improved CDI? CDI in the 21st century is no stranger to digitization and technology. A majority of hospitals currently employ some form of technology to augment their CDI programs. However, considering the direct impact of CDI on maintaining revenue and efficiency, there is a need to enhance its technological capabilities. And AI-enabled technology like natural language processing (NLP) promises to bring in a sea change to documentation improvement.

Typical digitized record systems implemented by hospitals that do not leverage the power of NLP rely on predefined codes and data sets that are useful in executing simple repetitive tasks. But when it comes to accomplishing tasks like coding and documentation, these tools fall short. Despite the widespread adoption of digitization, manual process continue to hinder the productivity of the clinical documentation process. Shallow analytics represented through spreadsheets indicate the disparity in information and operational siloes. NLP, on the other hand, can identify key characteristics in the documentation, extract large amounts of clinical evidence in a short amount of time, and improve collaboration throughout the CDI process.

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Higher Productivity

As a result, NLP-powered CDI is far more efficient than those that are powered by conventional technologies. For instance, a standard CDI approach takes an average of 17 minutes for a cardiology entry, whereas an NLP model takes just over 5 minutes.³ This ability to rapidly extract important documentation notes can counter the challenges in implementing a robust outpatient CDI program.

AI and NLP can render an EHR data depository into structured information. This enables medical coders to rapidly comb through enormous amounts of data to obtain pertinent information and lead to intelligent case prioritization. This type of automation strongly manifests itself in electronic query templates (EQTs). It makes the process of clarifying documentation in health records much quicker and leads to accurate code assignments. The ease of operating these tools also means that any stakeholder, irrespective of their knowledge of clinical documentation, can effectively code accurately. This can prove to be an important feature in improving physician engagement.

Most importantly, AI-enabled NLP solutions can help create a single unified information platform, thus eliminating the siloes and promoting the free exchange of information between stakeholders across departments. By fostering intra- and inter-departmental cooperation, these solutions can further improve the operational efficiency of the entire healthcare framework.

**The average return-on-investment for AI application
is USD 9.87 on every dollar spent.**

But consolidating information across a wide range of parameters and automating complex processes aren't the only upside to deploying AI-based tools to improve the CDI framework. One of the most important aspects of AI in CDI is the availability of advance data analytics. AI tools provide the CDI staff with valuable insights using analytics through dashboards and reports. This can greatly smoothen the process of increasing physician buy-in and their collaboration with HIM and CDI personnel. But more importantly, the numbers and insights extracted can provide CDI and HIM staff with recommendations and prioritize various actions by defining the most immediate goals of the department.

Clinical data analytics can pin down insights based on existing healthcare data to prioritize the patients that need treatment most urgently. They can also recognize where coding and documentation auditing can improve, leading to better overall CDI.

³ Realizing the Benefits of Clinical Documentation Improvement: <https://ehrintelligence.com/news/realizing-the-benefits-clinical-documentation-improvement>

Case Mix Index	Time reduced to review each record	Denials	Time required for Reporting
8% IMPROVED	40% REDUCED	30% REDUCED	70% REDUCED
<ul style="list-style-type: none"> • CC/MCCs • Queries • Clinical Validation 	<ul style="list-style-type: none"> • Auto suggested Query • No more Disparate Systems 	<ul style="list-style-type: none"> • Compliance alerts • Documentation improvement Opportunities 	<ul style="list-style-type: none"> • CDI Dashboards • Real time Analytics

Impact on KPIs due to AI

Time required in creating queries	Length of Stay Variance	Internal IT support for CDI	Time required for managing reviews
60% REDUCED	10% REDUCED	100% REDUCED	70% REDUCED
<ul style="list-style-type: none"> • One Click Query Building • Automated Query Process 	<ul style="list-style-type: none"> • GMLOS < LOS Alerts • CDI Collaboration with Case Management 	<ul style="list-style-type: none"> • Cloud Based Deployment • No Hardware, Servers needed • Zero Maintenance 	<ul style="list-style-type: none"> • Intelligent Worklist • Streamlined Workflow

The Case of Halifax Regional Medical Center

To see an NLP-powered CDI solution in action, consider the case of the Halifax Regional Medical Center (HRMC). The center implemented a CDI program in 2014. However, queries were handwritten, tracking was manual, and they faced several challenges with the encoder, which experienced frequent shutdowns and was unresponsive. As a result, their case mix index stood at an average of 1.11 and the discharged not finally coded (DNFC) was 7.2 days.

In a bid to improve their infrastructure, HRMC partnered with ezDI to implement an NLP-driven CDI solution. ezDI established full-site workflow automation software through computer-assisted coding and CDI (ezCAC and ezCDI). The final solution was integrated with ezAssess, ezDI's quality assurance software. This increased HRMC's case-mix index (CMI) by 6% and led to a 12% increase in capture of complications/comorbidities, major and otherwise (CC/MCC). Further, there was a 19% decrease in the time taken to code inpatient charts and a 13% increase in physician query response rate. Within a year of implementation, the revenue cycle had optimized with a bottom line impact of USD 1.39 million.



Leading the Way with Technology

With CDI as the beacon of progress for the healthcare industry, it is imperative for providers to adopt solutions that leverage technologies such as AI, NLP, and analytics. ezDI's industry-leading expertise in these technologies has led to integrated solutions that have assisted healthcare organizations in achieving a higher quality of documentation.

Our services range from AI-based and integrated Computer-Assisted Coding, CDI, Coding Compliance, Quality Measures, and Enterprise Analytics. Our clients have implemented them and seen an upsurge in hospital reputation, and more importantly, a higher quality of patient care. Our NLP-powered CDI solution can help you achieve effective intra-departmental collaboration and more accurate medical coding and billing so that you can provide better care to your patients.

Partnering with ezDI does not only mean being armed with the technology to improve your CDI program. Unlike other providers, we take full, end-to-own ownership of the process and can implement a solution that works for you in just 4-6 weeks.



For more information on how EZDI software and services can help your organization, reach us at: sales@ezdi.com or **202-629-4100**.